REMARKS

This amendment is a full and timely response to the Office Action mailed May 14, 2007. Reexamination and reconsideration are respectfully requested.

Specification

Upon further review, Applicants have not identified any additional errors in the Specification beyond those identified and corrected in the February 2, 2005 Preliminary Amendment. Applicants appreciate Examiner's careful attention to the Specification and welcome any suggestions from the Examiner in this regard.

Claims

Claims 1, 3, 6, 7, and 10 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Pat. No. 6,507,592 to Hurvig et al. ("Hurvig"). This rejection is respectfully traversed.

Hurvig teaches an apparatus for performing two-way communication in a time division multiplexed ("TDM") system. (Hurvig, Abstract). Each packet received by the apparatus is automatically associated with a received-time stamp by system hardware before it is placed in a buffer. (Hurvig, 13:34-40 and Figs. 2-3). This supposedly allows system software to accurately process incoming packets without the need for interrupts. (Hurvig, 13:67-14:3). Each packet to be transmitted by the apparatus is associated with a send-time stamp, indicating precisely when the packet should be transmitted. (Hurvig, 20:11-16). System hardware monitors a system clock and compares it against the send-time stamp to transmit the packet at the appropriate time. (Hurvig, 22:13-16). According to Hurvig, this apparatus can perform the bulk of packet-handling work in software (and is thus reconfigurable to updated data protocols) while still generating accurate timing information. (Hurvig, 3:30-62, 8:50-9:8). While Hurvig may teach a communication apparatus incorporating some time measurement features, it fails to teach or adequately suggest all of the features recited in Applicants' claims.

With regard to claims 1 and 6, Hurvig fails to teach or suggest all of the features recited therein. For example, Hurvig fails to teach or suggest "saving sender information [including a transmission time / showing conditions at a transmission time] of [a transmitted] packet." As noted in the May 14 Action, Hurvig may teach inserting an "output time stamp value into each outgoing packet at a predetermined position in the packet and subsequently transfer[ing] the time stamped outgoing packet to the interface unit memory area." (Hurvig, 5:61-64). However, Hurvig does not teach that this output time stamp, or any other type of sender information, is saved. Rather, the output time stamp is merely stored within the packet itself, (Hurvig, 20:16-18, 22:36-38); once the packet is transmitted, all record of the transmission time is lost. Furthermore, with specific regard to claim 6, even if Hurvig could be read to suggest "saving" the transmission time of a packet, there is no suggestion as to saving other information showing *conditions* at a transmission time, for example, the number of transmitted packets and a transmission octet count, (*see* Applicants' specification at page 30). The output time stamp value is merely the transmission time itself and not reflective of other conditions.

For at least these reasons, claims 1 and 6 are patentable over Hurvig. Additionally, claims 2-5, which are dependent on claim 1 and incorporate all of the limitations recited therein, are also patentable over Hurvig for at least these reasons.

With regard to claim 7, Hurvig fails to teach or suggest all of the features recited therein. For example, Hurvig fails to teach or suggest

> *determination means for determining whether or not said information data received from said application at a higher level includes predetermined attached information to be attached to said packet.*

Hurvig may teach device registers that store specific control parameters of the data transmitting or receiving process (e.g., starting or suspending the transmitter or receiver, the number of bytes in a packet, the state of the packet filter, etc.) controlled by software. (Hurvig, 5:34-42). However, Hurvig does not teach that these registers determine anything with regards to the *contents* of the packets, such as whether said packets have attached predetermined information. (Contrast this content-neutral behavior of Hurvig with, for example, the TS header checker **1111** taught in Applicants' specification at page

48, which examines the content of the packet to determine whether a packet includes a PCR field. *See also* Applicants' specification, Figs. 8-10.) Furthermore, nowhere in Hurvig is it suggested that some packets may contain attached information (*arguendo*, time stamps) while others do not. Clearly, Hurvig would not suggest to one having ordinary skill a determination means for discriminating among a non-existent dichotomy.

Hurvig also fails to teach or suggest

> *control means for allocating an area in said payload storage means as an area to be used for storing said attached information if said determination means determines that said information data received from said application at a higher level includes said attached information; and*

Even if the timestamps can be interpreted as the recited attached information, Hurvig does not teach that space within the payload storage means is selectively allocated for this information, based upon any condition. Rather, Hurvig teaches 32-bits of every packet is reserved for this transmission time information. (Hurvig, 13:3-9, 22:39-42, and Fig. 8).

For at least these reasons claim 7 is patentable over Hurvig. Furthermore, claims 8 and 9, which are dependent on claim 7 and incorporate all of the limitations recited therein, are also patentable over Hurvig for at least these reasons.

In light of these arguments and distinctions over the cited art, Applicants respectfully request that this rejection under 35 U.S.C. § 102(e) be withdrawn.

Claims 2, 4, and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hurvig in view of U.S. Pat. No. 6,510,150 to Ngo ("Ngo"). This rejection is respectfully traversed.

Ngo teaches a method for synchronizing a TDM network, specifically a wireless network. (Ngo, Abstract). According to the teachings of Ngo, a base station transmits the network time at the beginning of each TDM cycle. (Ngo, 4:7-17). Each end terminal immediately receives the transmitted network time and compares it against a locally predicted value and stores the calculated difference, (Ngo, 4:18-24). However, the local time counter is not corrected until later

in the network cycle when time constraints on the processor are less severe. (Ngo, 4:24-31). Similar to Hurvig, Ngo may teach a communication apparatus incorporating some time measurement features. However, neither reference nor any reasonable combination thereof, teaches or suggests all of the features recited in Applicants' claims.

As noted with regard to claim 1, Hurvig fails to teach or suggest "saving sender information including a transmission time of [a transmitted] packet." Ngo also fails to teach or suggest this feature; Ngo does not teach anything with regard to saving information regarding data packets after they have been transmitted. No combination of these references would teach or suggest a feature that is lacking from both references. For at least this reason, claims 2, 4, and 5, which are dependent on claim 1 and incorporate all of its limitations, are patentable over this combination of references.

With regard to claim 2, no combination of these references teaches or suggests all of the features recited therein. For example, neither of these references teaches or suggests

> *generating a management-information packet based on said sender information and said receiver information;*
> *transmitting said management-information packet to said network by way of said network device; and*
> *acquiring the management-information packet generated by another communication apparatus.*

Ngo may teach transmitting a timestamp value among all transceivers in the network; however, these timestamp values are not management-information packets as recited in Applicants' claim. In light of the teachings of Applicants' specification[1] and the plain meaning of the claim terms, a "management-information packet" contains at least information used for the *management* of the communication apparatus, i.e., information (such as information regarding the status and

[1] For example, see Applicants' specification at pages 24-25 (teaching that RTCP process means 210 is an example of a management-packet process means, and that that an RTCP packet is an example of a management packet *representing the condition of the network* (emphasis added)), page 27 (teaching that an RTCP packet contains a sender report and receiver report), pages 2 and 30 (teaching that a sender report contains management-information such as: the number of transmitted packets, a transmission octet count, and the like), pages 2 and 32 (teaching that a receiver report contains management-information such as: the number of received packets, the number of lost packets, the packet loss factor, information on fluctuations of network jitters, the average value of network jitters, and the like), and pages 27, 38 and the Abstract (teaching that the RTCP management packets are used for maintaining and/or improving the quality of the network transmissions).

performance of the network) useful for controlling the behavior of the apparatus for maintaining the quality of the network communication. The mere timestamps taught by Ngo do not contain any such management information. Furthermore, even if mere timestamps could reasonably be considered management-information packets, Ngo teaches that a single apparatus either transmits a timestamp (e.g., the "central controller" or "base station") or acquires a timestamp (e.g., the "end terminals" or "wireless terminals"), but does not disclose a single apparatus which performs both functions as recited in claim 2. (Ngo, 1:49-55). For at least these reasons, claim 2 is patentable over these references.

In light of these arguments and distinctions over the cited art, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be withdrawn.

Claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hurvig in view of U.S. Pat. No. 5,926,458 to Yin ("Yin"). This rejection is respectfully traversed.

Yin teaches a system for prioritizing the transmission of data amongst a plurality of queues. As data is received by the apparatus, it is assigned to an appropriate queue. (Yin, 5:18-25). The apparatus then transmits data from the queue with a highest priority, (Yin, 5:27-32), and updates the priority of all the processed queue, (Yin, 5:56-67). According to Yin, this process allows for multiple queues of varying quality requirements to be transmitted through the router without significant disruption. (Yin, 3:3-7). Yin may teach a communication apparatus that controls the transmission of packets. However, Yin, Hurvig, or any reasonable combination thereof, fails to teach or suggests all of the features recited in Applicants' claims.

As noted with regard to claim 7, Hurvig fails to teach or suggest the determination means recited therein. Yin also fails to teach or suggest this feature; while Yin may teach some analysis of the contents of a packet header, (Yin, 5:21-23), there is no suggestion in Yin that some packets may contain the necessary queue-identifying information while others do not, nor is there any suggestion of a means to detect this type of distinction. No combination of these references would teach or suggest a feature that is lacking from both references. For at least this

reason, claims 8 and 9, which are dependent on claim 7 and incorporate all of its limitations, are patentable over this combination of references.

With regard to claim 8, no combination of these references teaches or suggests all of the features recited therein. For example, neither of these references teaches or suggests "transmission control information write means for monitoring a result output by said determination means **and** a total amount of the information data stored in said payload storage means to determine whether or not a predetermined transmission condition is satisfied" (emphasis added). As noted, neither reference teaches said determination means, and thus neither reference would teach a transmission control information write means that monitors the output of an absent element. Hurvig also fails to teach or suggest monitoring the total amount of information stored in the payload storage area.[2] The closest that these references come to teaching anything like this feature is Yin's passing reference that the packet scheduler **28** may receive "information indicating whether a particular queue is full or empty." However, this minimal state information cannot be interpreted as monitoring the total amount of information data stored—any amount of data between "full" and "empty" would go unnoticed.

Furthermore, neither reference teaches or suggests "writing information necessary for said transmission of said packet into said area allocated in said payload storage means as an area to be used for storing said transmission control information if said transmission condition is satisfied." Neither Hurvig nor Yin teaches or suggests conditionally writing necessary transmission control information into the payload storage area. In both references, packets are apparently stored within the queues in a ready to transmit state, merely waiting for the appropriate time (Hurvig) or access to the channel (Yin). When these respective events occur, neither reference teaches writing any additional information to the payload storage area.

For at least these reasons claim 8 is patentable over this combination of references. Furthermore, claim 9, which is dependent on claim 8 and contains all of the limitations recited therein, is also patentable for at least these reasons.

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[2] Note that signal OWAIT taught by Hurvig is activated by the external device when its internal buffer is full in order to halt transmission, and is not indicative of the state of the transmission apparatus' payload storage area . (Hurvig, 20:9-11).

With regard to claim 9, no combination of these references teaches or suggests all of the features recited therein. For example, neither reference teaches or suggests "writ[ing] transmission request information making a request for execution of said transmission of said packet into said payload storage means as said transmission control information if said transmission condition is satisfied." As stated in the May 14 Action, Hurvig fails to teach or suggest this feature. While the packet scheduler of Yin may receive information regarding bandwidth allocation for each queue, the bandwidth allocation information is not transmission request information. First, the bandwidth allocation information is, at best, at the granularity of queues, not individual packets as recited in claim 9. (*See* Yin, 6:6-32). Second, the bandwidth allocation information does not request the execution of a transmission, it merely affects how often the packets scheduler **28** checks the status of each queue. (See Yin, 6:44-8:15). Even if this bandwidth allocation information were analogous to the transmission request information, Yin fails to teach that it is written into the payload storage means. Rather, the bandwidth allocation information is transmitted directly from the reservation protocol flow admission module **26** to the packet scheduler **28**. (Yin, 4:52-58).

Furthermore, neither reference teaches or suggests "execut[ing] said transmission of said packet in accordance with said transmission control information if said request information for execution of said transmission of said packet is detected." As stated in the May 14 Action, Hurvig fails to teach or suggest this feature. Yin also fails to teach this feature. As recited in claim 9, transmission of a packet occurs when request information, written into the payload storage area, is detected. According to Yin, if a packet is stored in the payload storage area (e.g., the queues), it will be transmitted hen the queue is serviced, without examining the payload storage area for any additional transmission control information. (See Yin, 6:44-8:15). For at least these reasons claim 9 is patentable over this combination of references.

In light of these arguments and distinctions over the cited art, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. SON-2850 from which the undersigned is authorized to draw.

Dated: July 9, 2007

Respectfully submitted,

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